

IN THE CLAIMS

1. (Currently Amended) A method for producing oxidized flavor-active terpenes from terpene hydrocarbons by means of a selective biotransformation using microorganisms of the *ascomycetes*, *basidiomycetes* and *deuteromycetes* classes, comprising:

(a) ~~providing a lyophilized~~ perforating mycelium by lyophilization measures and permeating mycelium by ultrasonic treatment and/or extrusion, wherein the permeating step may be performed before or after the perforating step,

(b) rehydrating the ~~lyophilized~~ perforated and permeated mycelium,

(c) mixing the rehydrated mycelium from step (b) with the substrate, and

(d) recovering the oxidized flavor-active terpene.

2. (Canceled)

3. (Previously Presented) The method as claimed in Claim 1, wherein the biotransformation is carried out in a submerged culture.

4. (Previously Presented) The method as claimed in Claim 1, wherein the biotransformation is carried out in an enantioselective, a stereoselective and/or a regioselective manner.

5. (Previously Presented) The method as claimed in Claim 1, wherein representatives of *Fusarium*, *Pleurotus*, *Penicillium* and *Chaetomium* are used as the microorganisms.

6. (Previously Presented) The method as claimed in Claim 5, wherein *Fusarium proliferatus*, *Pleurotus sapidus*, *Penicillium citrinum* and *Chaetomium globosum* are used as the microorganisms.

7. (Previously Presented) The method as claimed in Claim 1, wherein mono- and sesquiterpenes are used as the terpene hydrocarbons.
8. (Previously Presented) The method as claimed in Claim 1, wherein limonene, pinene, valencene, farnesene, thymol and dimethyl allyl alcohol are used as the terpene hydrocarbons.
9. (Previously Presented) The method as claimed in Claim 8, wherein R-(+) limonene or S-(-) limonene are used as the terpene hydrocarbons.
10. (Previously Presented) The method as claimed in Claim 1, wherein before the biotransformation an enzyme induction is carried out in the *mycelium* prior to lyophilization by an addition of substrate.
11. (Previously Presented) The method as claimed in Claim 1, wherein the biotransformation is carried out in a two-phase system.
12. (Original) The method as claimed in Claim 11, wherein the biotransformation is carried out in a two-phase system without co-solvents.
13. (Canceled)
14. (Currently Amended) The method as claimed in Claim ~~[[13]]~~1, wherein the biotransformation is carried out in a medium with a reduced quantity of carbon source ~~reduced quantity M of carbon source M is in an amount~~ $< 50 \text{ gL}^{-1}$.
15. (Previously Presented) The method as claimed in Claim 1, wherein the reaction is carried out in a stirred tank, surface or fixed bed reactor.
16. (Previously Presented) The method as claimed in Claim 1, wherein terpenoid alcohols, epoxides, aldehydes, ketones, multiple alcohols, carbonyls and carbonyl alcohols are obtained as the flavor-active terpenes.

17. (Previously Presented) The method as claimed in Claim 16, wherein piperitone, isopiperitone, isopiperitenol, isopiperitenone, perillaaldehyde, carvone, carveol, linalool, linalool oxide, terpineol and nootkatol and nootkatone are obtained.
18. (Previously Presented) The method as claimed in Claim 1, wherein the biotransformation products are isolated from cellular compartments or fractions.
19. (Previously Presented) The method as claimed in Claim 1, wherein firstly R-(+)-limonene is biotransformed in an enantioselective manner to cis-(+)-carveol and S-(-)-limonene is biotransformed in an enantioselective manner to trans-(-)-carveol and subsequently trans-(-)-carveol to R-(-)-carvone.
20. (Previously Amended) The method as claimed in Claim 19, wherein the enantioselective biotransformation of R-(+)-limonene to cis-(+)-carveol is carried out with *Fusarium* species as the biocatalyst.
21. (Previously Presented) The method as claimed in Claim 19, wherein the enantioselective transformation of trans-(-)-carveol to R-(-)-carvon is carried out with species of the genus *Pleurotus* as the biocatalyst.
22. (Withdrawn) The method as claimed in Claim 1, wherein bicyclic sesquiterpenes are transformed to β -nootkatol and subsequently to nootkatone.
23. (Withdrawn) The method as claimed in Claim 22, wherein the transformation of bicyclic sesquiterpenes to β -nootkatol and subsequently to nootkatone is carried out with *Chaetomium* species.